Governor's Climate Action Team
Transportation Implementation Workgroup

DRAFT T-6 - Rail Element

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Rail transport is one of the most energy efficient ways to move people and goods along major corridors—for full-sized trains, rail emissions are 2-4 times less than for the same trip or service by car or truck. The following provides a list of options for increasing the air emissions benefits of rail in Washington State.

1. Increase freight rail system capacity to accommodate growth in freight movement.

On a national level, freight demand is projected to almost double in the next 35 years. Without improvements in freight rail capacity, this increase in demand would need to be accommodated by trucks using the freeway system. Increasing the capacity of the freight rail system—which could include maintaining and improving the physical condition of certain, otherwise viable short line railroads—so that it can absorb at least part of the projected increase in freight will help reduce the air emissions due to the movement of freight.

There are two ways to improve the capacity of the freight rail system: by making operational changes, and by increasing the physical capacity of the system. Sometimes physical improvements are needed to maximize the benefits of operational changes and vice versa. (For example, increasing train lengths can provide benefits only if sidings along the mainline can accommodate the longer trains. On the other hand, increasing the length and number of sidings, for example along the Columbia River, allows for using the tracks along both sides of the river as one-way couplet, increasing the operational capacity of the system even further.) While both types of change are entirely in the purview of the commercial railroads, Washington State can help facilitate their implementation. WSDOT is currently engaged in a process to develop a comprehensive approach to prioritizing and determining potential state action to implement freight (and passenger) rail projects. The proposed approach includes an evaluation of the environmental, cost-benefit, safety, and other impacts on both rail users and the community at large. That process could be used to begin a dialogue with the railroads to implement the projects and operational changes that would increase the capacity of Washington's freight rail system.

Since freight railroads move freight with significantly less air emissions than trucks, it is important to ensure that they have the ability increase service as freight volumes grow. The following list provides an overview of some of the projects and actions, related to the freight (and passenger) rail network, to be considered:

- I-5 Corridor:
  - Triple-tracking the mainline between Seattle and Tacoma is the most immediate need. (This may be achieved with a new agreement between BNSF and Sound Transit as part of future Sounder service expansion.)
  - West Vancouver Freight Access
  - Point Defiance Bypass
  - Blakeslee Junction
  - Green River Industrial Leads
  - Port of Seattle access and ARGO Yard operations—Duwamish Corridor and second lead improvements
  - Mainline access to Port of Tacoma—North Wye Junction and Puyallup River Crossing
  - Martin's Bluff Third Mainline
- Support the creation of joint operating and trackage agreements between the BNSF and UPRR to allow equal access to mainline infrastructure, such as the current and future Stampede Pass tunnel, and the Columbia River Gorge mainlines. Joint and directional operation on the Stevens Pass and Stampede Pass lines, and on the Columbia River Gorge lines, would facilitate an increase in the operational capacity of the state's freight rail system.
- Improve the Stampede Pass line to allow for double-stack service:
  - Crown the existing tunnel or build a new tunnel
  - Provide complimentary track upgrades
  - Mitigate the impacts on local communities (e.g. M Street in Auburn)
  - Re-establish service on the Ellensburg to Lind line
  - Operate Stampede and Stevens Pass as directional running corridors (i.e. as a one-way couplet)
- Work with the Class 1 railroads to make the improvements needed to operate the BNSF and UP lines along the Columbia River as directional running corridors.
- Maintain a substantive program for improving and maintaining short line railroads that have sufficient projected freight to make a difference in air quality.

2. Preserve the potential for future east-west freight rail capacity improvements by extending the sun-set date for the Ellensburg-Lind section of the old Milwaukee Road.

In Washington State, east-west rail capacity is restricted by the Cascades. One of three options to cross the mountains currently carries only limited amounts of freight: Stampede Pass. We should retain the ability convert this route to higher density use in the future, while avoiding negative air quality and community impacts from at-grade crossings along the route. The old Milwaukee Road line between Ellensburg and Lind can both eliminate the need for grade crossings in the Yakima Valley and allow use of Stevens and Stampede Passes as one-way couplet, further increasing the capacity of the system.

However, that opportunity will be lost unless the sunset date is extended during the 2009 Legislative Session. While reactivating that line is currently not financially

viable, it is essential—coordinated with capacity increases at Stampede Pass—to provide competitive east-west freight rail service in the future.

3. Complete the FAST Corridor and other grade separation projects that significantly reducing idling of cars and trucks.

At-grade rail crossings slow trains and cause cars and trucks to idle as they wait for trains to clear the crossing. The FAST Corridor program was established with the express purpose of eliminating such at-grade crossings in the Green River Valley, to both reduce the impact of rail freight on local communities and to speed the movement of freight rail. FMSIB's project list contains a number of other rail crossings in other parts of the state. Eliminating at grade crossings, particularly in densely populated areas where trains cause significant back-ups on the roads they cross, has the potential to significantly reduce emissions from idling cars and trucks.

4. Expand intercity passenger rail service and capacity in a way that does not harm freight rail service and capacity.

Having completed the corridor improvements called for in the original Sound Move package, Sound Transit is currently negotiating a new agreement with BNSF for additional Sounder service between Seattle and Tacoma. The new agreement should commit to implementing projects that ensure mainline freight capacity in the corridor in a timely fashion before additional Sounder trains are running. In certain locations, it may be necessary to separate the movement of passenger and freight trains to maximize the efficiency of both types of rail service. An example of such a project is the Point Defiance Bypass. We should begin to identify other locations where this might become necessary in the future. WSDOT's management of the Amtrak Cascades service is currently identifying passenger rail service improvements and capacity with the Cascades Mid-Range Plan, which is due to the Legislature on Dec. 1st, 2008.

5. Further improve the fuel efficiency and reduce the air emissions of the equipment used by freight railroads.

Due to both environmental considerations and high fuel prices, the Class 1 railroads operating Washington State have already begun to invest heavily in technologies to reduce their fuel consumption and related air emissions. Following are examples of new and emerging technologies that are being implemented:

Clean, efficient locomotive power

BNSF, for example, has already installed anti-idling equipment on about 4,200 of its 6,500 locomotives. It continues to install these devices on additional locomotives in its existing fleet and on all new locomotives. Approximately 40 percent (more than 3,500) of Union Pacific's locomotive fleet is now equipped with anti-idling technology. Tacoma Rail, a switching and short-haul operator, installed anti-idling devices on six of its 18 locomotive fleet. In addition, the use of Green Goats and Multiple Gen Set locomotives for switching operations by BNSF and UP can reduce emissions by 80-90% compared to conventional train engines.

Friction reduction

The railroads are also using emerging technologies such as lubricating the wheel flange of locomotives (1-5% decrease in fuel use), lubricating the top of the rail on the track itself, as well as installing low torque bearings in rail car wheels (up to 8% reduction in fuel use per train set) to reduce friction. Expanding use of these and similar technologies can further increase fuel efficiency.

Use of electric equipment

Another option for reducing emissions and increasing the capacity of the freight rail system is to use electric powered equipment where possible. Again, Class 1 railroads already implement these improvements where they are economically viable. In spring of 2008, the BNSF reopened its North Seattle International Gateway intermodal yard after installing four electric powered, rail-mounted gantry cranes. The cranes move containers between trucks and rail cars, producing zero emissions, and reducing the need for diesel-powered trucks to move containers within the facility. There may be additional opportunities for use of electric equipment rather than diesel powered equipment at intermodal yards.

Class 1 railroads generally have access to the capital needed to make these types of investments, which pay off in relatively short periods of time. Working with the railroads, the clean air agencies, and the federal government to provide funding for pilot projects to test new and emerging technologies might be the best way to help facilitate the efforts of Class 1 railroads. Smaller short-haul and switching locomotive operators may find it difficult to access the necessary funds to improve the efficiency of their older locomotives and/or install anti-idling and other fuel saving equipment. A state grant or loan program targeted toward these smaller operators could be useful.